Substance Abuse Control: How Do We Measure Success?

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Abstract

Because of the criminalization of drug use, measures of recidivism have been used to evaluate our progress in controlling substance abuse. However, there is no consistently agreed upon measure of recidivism. Relapse prevention is used in clinical settings to measure drug treatment success, but the definition of relapse varies among treatment providers. There are other methods of measuring success in managing the problems associated with substance abuse. However, these measures may require a reorganization of our perception of success. The goal of this paper is to examine the boundaries surrounding our measurement processes, and provide recommendations for gauging meaningful results.

Introduction

According to the former Attorney General of the United States, John Ascroft, law enforcement more doubled their arrest rate for drug offenses between the mid-1980's and 2000 (Anonymous 2001, 2). He stated that tougher federal drug laws and stricter enforcement were making a difference in eliminating the major drug offenders from our nation's streets. Arrest rates are a traditional form of measurement in law enforcement, but it is unclear how successful arrests and convictions have been to eliminating substance abuse.

In the age of Evidence Based Practices, it is nice to know what works best. But the problem of substance abuse is so complex and multidimensional that it is difficult to measure success or failure adequately. Those using illegal drugs are labeled addicts, substance abusers, drug offenders, and criminals. Criminal justice agencies and treatment facilities alike intervene. While both seek to control substance abuse, they differ widely in their methods and measurements of success. Criminal justice strives to control substance abuse through incapacitation by separating drug users from the supply of drugs. Like a body count in a battle, the number of arrests and convictions are used to measure the gains made in controlling illegal drugs. Recidivism and revocation can be seen as failures to maintain that control. While recidivism can provide direct measures of the criminal elements of substance abuse, relapse points to the clinical factors related to treatment failures. Preventing relapses back into drug use has been the focus of much of the research in evidence based practices. However, recidivism

and relapse measures tend to restrict our vision of the problem and the many other potential solutions. There are less conventional means of evaluating what works that may be more encompassing and have more relevance to society. However, these processes may require a reorganization of our perception of success. This paper examines the measurement of substance abuse from a multidimensional point of view in order to augment our evaluation of success.

Extent of the Problem

It is estimated by the Bureau of Justice Statistics that by the year 2000 almost 57% of U.S. federal prisoners and 21% of state prisoners were drug offenders (Bureau of Justice Statistics 2007). It is has been noted in previous research that a quarter to a third of offenders were using illegal drugs at the time of their offense, and about three-quarters of all offenders had a history of drug abuse (Harrison 2001). The relationship between crime and drug use appears significant. However, it would be a mistake to place all drug offenders into one classification. There are offenders who used drugs as a part of their offense or as a reason for their offense. Other offenders may be classified as criminals who also use drugs. Finally, there are offenders who are merely people who have an addiction to illegal drugs, but no other form of criminal behavior. These three types of drug offenders call for three types of measurements and three types of control methods.

Traditional Measurements

Due to the increase in federal drug offense laws since 1994, more offenders are being targeted for arrest. However, arrests demonstrate the large extent of the problem rather than a success in controlling the problem. Traditionally, various measures of recidivism have been employed to justify or denounce policies and programs attacking illicit drug use. Unfortunately, there is no universally accepted measure of recidivism (Israel and Chui 2006). It varies widely depending on the agency and purpose for the analysis. At its core, recidivism looks for behaviors or violations of conditions that are prohibited. Violations may take many different forms to include criminal acts, procedural breaches of probation or parole supervision, and other prohibited non-criminal behavior. Likewise, a violation may be an omission of behavior such as not submitting to drug testing or failing to complete substance abuse treatment. Violations vary according to the discretion of the agency monitoring offenders. Whereas one agency may allow

an offender a second or third chance to reform after failing a urinalysis, another agency may strictly invoke revocation proceedings after one failure. This discretion applies to the many criminal justice personnel managing the drug offender—probation/parole officers, judges, substance abuse treatment providers. Therefore, obtaining a consistent, standardized measure of recidivism across many agencies is tenuous. Furthermore, there is no agreement about how long one should follow offenders to collect data on violations. Conventional wisdom in the field is that drug offenders are most in danger of returning to their life of drugs during the first year of release from prison or supervision. Following the first year, the time of data collection may be more of a matter of funding for administrative purposes than for evaluation merit.

In its simplest form, recidivism can be thought of as the 'probability' of someone committing a violation. Because it is impossible to know with certainty each and every time someone commits a violation, recidivism numbers need to be viewed as an estimate of the extent of violations occurring. Therefore, defining the violation defines the act of recidivism, and estimating the probability of that act, measures recidivism. True recidivism cannot be measured because we rarely know when and how every offender commits a violation. Offenders are not very reliable about confessing their sins. Therefore, one must rely on secondary measures such as re-arrest records and collateral information from outside sources, such as treatment summaries. As a result, errors in recidivism measurements are made. Blumstein and Larson (1971) described two kinds of errors that may occur in recidivism measurements, Type I and Type II errors. Type I errors are made by improperly classifying a subject as a recidivist. Wrongful arrests and inappropriate revocation errors would be included in this category. Conversely, Type II errors are made by not counting those who have committed a violation. This would include offenders who committed crimes or violations for which they were never caught. It would also consist of offenders who were not prosecuted or revoked due to insufficient evidence or procedural errors. Attempts to offset Type II errors are sometimes made by counting arrests, regardless of the prosecution outcome. However, one then runs the risk of a Type I error.

Often the drug offenders or drug users are not identified until they come in contact with the criminal justice system or mental health profession. Once they have been identified, then their behavior is modified. Like the problem inherent in quantum physics - by observing the offender or addict, we are influencing the outcome of the measurement. Supervision of drug

offenders does not necessarily stop their behavior, but they may change the way they go about trafficking or using drugs. This change in behavior distorts the accuracy of measurement, prehaps leading to an increase in Type II errors.

Some agencies have attempted to standardize the way they measure recidivism. The Home Office in the United Kingdom defined recidivism within community correctional programs according to the following criteria (Underdown 1998):

1) Reconviction rates

2) Levels of completion and compliance with supervision conditions.

3) Changes in social circumstances

4) Changes in attitude or behavior

These criteria may be adapted to most drug offender supervision, and they provide a mix of quantitative and qualitative measurement. While new convictions and failure to comply with supervision conditions are very straightforward quantitative indications of recidivism, changes in attitudes or social circumstances are more subjective and individualized. These changes may be positive or negative. Adopting drug abstinence would be a positive attitude that could be observed in one's behavior. Getting fired from work would demonstrate a negative social circumstance.

Drug Use Measurements

Another problem with measurement research in general is the agreement upon a baseline. A baseline provides a starting point for comparison and measurement. In substance abuse an important baseline figure would be the number of people on average who regularly use drugs or alcohol. The baseline can be further broken down by age, race, frequency of use, type of drugs used, and so forth to fine tune a measurement. After implementing a program, any deviations from the baseline suggest a possible success or failure. For example, if a high school started a drug prevention program in their health classes, they could not know whether or not the program is working if they had no knowledge of how many students were using drugs prior to the program. Finding the baseline may be done on a small scale, such as a high school, or on much larger scales that cross the nation. Sample surveys are the most frequently used method of estimating the extent of nationwide drug use. Drug surveys vary widely from one to another and have been criticized for their inability to obtain a full and accurate understanding of the

population they are sampling. Limitations include the degree of confidence subjects have in the confidentiality of their responses (Fendrich and Miller 2000). Nevertheless, the large sample size of the national surveys makes them powerful measurement tools. The following are three large nation wide surveys of drug use in the United States.

National Survey on Drug Use and Health (NSDUA)—each year approximately 67,500 individuals across the fifty states, 12 years old and older, are interviewed about their use of alcohol, tobacco, and illicit drugs. The 2006 results reported that 20.4 million people (8.3% of the population) had used an illicit drug within the month prior to the survey (Substance Abuse and Mental Health Services Administration 2007).

Monitoring the Future surveys (MTF) of middle and high school students—a nationwide survey of 8^{th}, 10^{th}, and 12^{th} grade students which began in 1975 is designed to undercover changing trends and potential risk factors in adolescent and young adults regarding tobacco, drug and alcohol use. In recent years approximately 48,000 students from over 400 public and private schools were surveyed annually. In the 1996-97 school year the results indicated that 23% of 8^{th} graders, 39% of 10^{th} graders, and 42% of 12^{th} grade students had used an illicit drug at least once during the year. The most common drug used was marijuana, however, about 30% of the students had tried a drug other than marijuana. Drug use trends suggested a gradual reduction in drug use after 1996. By 2007, student drug use by 8^{th} graders had declined to 13%, and drug use by 10^{th} graders declined to 28%. The decline was less steady for 12^{th} graders, reaching 36% in 2007. While the use of marijuana remained the most frequent drug used, its use significantly declined for 8^{th} graders between 2006 and 2007. The use of amphetamines by students also declined since the mid-1990's. However, the misuse of prescription drugs, such as OxyContin and Vicodin, as well as other 'designer drugs' like ecstasy remained steady or slightly increased. The most recent change in drug use is the misuse of over-the-counter cough and cold medications (Johnston, O'Malley, Bachman, and Schulenberg 2007).

Arrestee Drug Abuse Monitoring (ADAM)—within 48 hours of arrest, a random selection of arrestees are asked to participate in the study by providing urine samples for analysis of ten illicit drugs. Demographic and drug/alcohol use behavior are also collected through a structured interview, including information about their drug transactions and "drug market." Thirty-five communities across the country participated in the 2000 ADAM project. The results indicated that at least 64% of the adult males arrested had recently used one or more illicit drug (primarily

marijuana, cocaine, opiates, methamphetamines, or PCP). Marijuana was the most common, with cocaine the second most used drug. Of these arrestees, about 25 to 50 percent were classified as drug dependent and in need of treatment. However, only 2 to 17 percent had received any treatment within the past year (Arrestee Drug Abuse Monitoring 2003).

Sometimes official records are used to estimate drug use in special populations, such as hospital reports on drug use in pregnant women. However, these sources suffer from many of the same problems of surveys - accuracy of reporters, variability of information across reports, missing data from incomplete reports (Fendrich and Miller 2000). Combining survey and record reports may fill in the gaps between the two, and even discover new subjects.

Overall, it has been estimated that drug use has declined from the liberal attitudes of the 1970's to the more conservative mind-set in the 1990's. After a gradual steady decline since the 1970's, general drug use has remained fairly stable in the range of 7-8%. Nevertheless, drug related arrests increased three-fold during that time, continuing to increase long after the drug use leveled off (Goode 2008, 286). Similarly state and federal prison population increased almost 4.5 times in the United States between 1980 and 2004, largely on the basis of enforcing additional drug offense laws and the increase in sentence length corresponding to the "get tough on crime" campaign. Drug offenders serve only about one and a half years less in prison than those convicted of violent crimes (Goode 2008, 387).

In determining whether success has been made in the fight against drugs, perhaps absolute numbers are not always best. Recidivism varies over time and space regardless of arrest rates. It has not been shown that more drug convictions reduce drug offense recidivism. More drug arrests are negated if drug offense recidivism remains high. Turning attention from enforcement to corrections offers another perspective. If the baseline for a criminal career is 100 crimes, and correctional treatment program interventions reduces that career to 75 crimes, then corrections was effective in reducing crime by 25% for that criminal. Multiple the effects for the other similarly convicted criminals obtaining similar correctional interventions, and one can estimate a probably of reduction in recidivism. The trick is to not count apples and oranges in the same basket. Not all correctional programs for drug offenders are equally effective, because not all drug offenders have equivalent substance abuse problems. Offenders with antisocial personality disorder may use drugs as a part of their impulsive, rule-breaking nature. Other offenders may have deeply set personal problems for which they use drugs as a means of escape

and avoidance. While others may have seen drug trafficking as an attractive money making opportunity, only to have been trapped by the addiction of sampling their products. It is expected that the more effective drug treatment programs take these individual differences into consideration. In addition to personal characteristics, correctional programs need to include public safety, personal accountability, and community re-entry assistance into their equations of success (Sung and Richter 2006; Wexler 2003).

Measures of Relapse

Use of drugs may be illegal, but it does not because abuse until it interferes with someone's personal, social, or occupational life. Once drug use becomes "diagnosable," it can be treated, and the treatment progress can be measured. Most notable in substance abuse treatment is the attention given to relapse prevention. Relapse monitoring has been used in many clinical fields; however, in the treatment of substance abuse, relapse refers to the return to behaviors that trigger drug use after a period of drug free living (Witkiewitz and Marlatt 2007). As in recidivism research, relapse monitoring takes many forms. Relapse may be defined as starting to use drugs again, or more broadly observed as putting themselves in jeopardy of using drugs. As an example, the decision to "socialize" with an ex-girlfriend who is known to use cocaine regularly may be considered a relapse back into patterns of behavior that lead to substance abuse in the past.

Four commonly used methods to measure relapse are given by Potgieter, Deckers, and Geerlings (1999):

(1) Frequency and quantity of use—how often and how much does the person use drugs.

(2) Cumulative duration of abstinence—how long can the person maintain abstinence over time.

(3) Post-withdrawal abstinent period—how long can the person maintain abstinence after withdrawal before relapsing.

(4) Stable recovery period—how long can the person maintain a productive lifestyle.

Common to each is the measurement of time that a person can avoid drug use after mastering some self control over it. The difference among the methods is a matter of when the time clock starts ticking. Assumed within each of these measurements is that individual control is maintained by practicing the relapse prevention techniques and/or other skills learned in

treatment. It is interesting to note that from a measurement point of view, treatment techniques are irrelevant as long as relapse is avoided.

In many substance abuse treatment circles, relapse is often viewed as a failure on the part of the clients to maintain control over their sobriety. However, Marlatt (1985) preferred to see relapse as a part of the transition that one undergoes while learning how to maintain sobriety. It is common for those in treatment for substance abuse to fall prey to repeated relapses back into drug use. According to a longitudinal study by Hser, Longshore, and Anglin (2007), it was noted that it was not uncommon for heroin users to suffer numerous relapses for 8 to 10 years before finally obtaining stable recovery. Therefore, the measurement of relapse would be better served if viewed as an on-going process rather than an all-or-none success or failure.

Less Conventional Measures of Success

Harm Reduction Measurement

MacCoun and Reuter (2001, 388-90) argued we cannot say all drugs are bad because we have allowed the harm associated with alcohol, cigarettes, and caffeine drinks. Instead, they recommended examining the overall harm imposed by using the substance. They presented the following formula as a template for gauging harmfulness:

Total Harm = Prevalence x Intensity x Dose

where Prevalence is the total number of people using a particular drug, Intensity is the frequency of use across the period of time measured, and Dose is the harmfulness inherent each time that drug is used. Prevalence and Intensity are fairly easy to measure by counting the users and the average number of times they use the drug. Dose is more difficult to quantify. The harm associated with one dose of a certain drug depends on the biochemistry alterations inherent in the drug, as well as the physiological and psychological constitution of the drug user. Beyond the individual drug users, there are additional people around them who are affected by their drug use—family, coworkers, and friends. Add to this equation the strangers who are affected by drug users—by way of crime victims, accident fatalities, and the like—and harm per dose eventually has a cumulative effect. The United States has sought to reduce the harm of drugs almost exclusively through prevalence reduction tactics (MacCoun and Reuter 2001, 385-88). However, law enforcement interdiction and “Just Say No” tactics limit the scope of interventions

possible, largely ignoring public health, public safety, and social welfare concerns of the non-drug using population.

Economic Measurements

Instead of orientating recidivism along criminal violations, one can follow an economic path. According to an economic model, criminals are motivated, as are other individuals, by an expected net gain from the expenditure of time and resources put into the illegal activity. When the gain from criminal labor is greater than the gain from expending the same resources in legitimate labor, crime is the preferred activity (Monzingo 1977). Criminal justice agencies have attempted to counter this path by increasing the costs of the time and resources associated with criminal labor. An economist might measure the current policy towards combating illegal drugs in terms of attempting to increase the costs of "doing business" in drug trafficking through law enforcement interdiction strategies and longer prison sentences. If these costs are consistently applied, drug offenders should theoretically be economically motivated to seek other forms of income. Because drug trafficking continues to occur rather steadily, one must assume those "costs" have not yet reached a negative level. Indeed, one may argue that the government's enforcement costs outweigh the drug trafficking costs, thus making drug offenses the more economical enterprise. The corollary to the net-gain model is the supply-demand model. The assumption is that supplying drugs remains profitable, despite expenses, due to the demand for it by a large number of customers. If increasing drug trafficking costs appears to be too expensive for the government, then the government has the recourse of lowering customer demand through education, prevention, and negative advertisements. Each of these models lends themselves to cost-benefit analysis as a means of measuring success. The question is what societal benefits is the government 'buying' with its dollars? This would mean identifying the direct and indirect expenses of controlling drugs. Direct costs would include, adding up the criminal justice expenditure (enforcement, prosecution, prison and supervision), the increase in property/violent crime to support drug trafficking operations and drug addiction, the emergency services due to overdoses, the increase medical costs to care for health problems related to drug abuse, and other public expenditures. Indirect costs involve enforcement diverted from other crime suppression operations, a decrease in the tax base due to a loss of potential productive employment through

incarceration, public assistance costs for caring for children of addicts, and similar social concerns. Reductions in any of these direct and indirect costs could suggest a success.

To be fair, the state and federal governments provide a great deal of funding to programs aimed at controlling drug abuse. However, each year one reads about treatment programs and enforcement initiatives closing due to lack of government funds, despite a track record of success. Perhaps an another alternative measure of success would be in monitoring how well politicians and agency leaders maintain funding for substance abuse programs demonstrating effective outcomes.

Social Measurements

Measurements of social change may be more meaningful to society in the long-term. Concerns about improving the economy, strengthening family bonds, enriching the community, and ensuring job security are important to most people. Perhaps the real numbers to contrast are tradeoffs made between fighting drugs and developing society. These tradeoffs may be exemplified as the differences between:

Prison population vs. Unemployment population

Arrests numbers vs. Relapse numbers

Jail time vs. Time in treatment

Drug Court vs. Divorce Court

Convictions vs. Evictions

In short, what non-criminal measurements need to be collected? Social and interpersonal successes may be the most important key to reducing substance abuse. Data to be collected may include the number of days a drug abuser stays out of jail, stays in treatment, stays gainfully employed, and continues to productively care for his/her family. Herein also contains the underlying social question. At what point can we say that illegal drug use is not significantly harmful to the general population, and is thereby controlled adequately?

Goals for the Future

Controlling substance abuse will require strategies that are multimodal and cross numerous boundaries—organizational, societal, and individual. Designing and implementing programs that match goals across these boundaries will likely be the most effective. One multimodal

approach which has had some success is the concept of drug courts. With a goal aimed at assisted rehabilitation, drug courts draw together elements of the criminal justice system and substance abuse treatment services. Drug courts were initiated in 1989 in response to ever increasing caseloads of drug offenses (Sanford and Arrigo 2005). While they vary across local jurisdictions, drug courts tend to be diversion programs targeting offenders with diagnosable substance abuse disorders. After arrest, an assessment is made to identify offenders who qualify for the drug court. These offenders are channeled into substance abuse treatment and supervision programs more quickly than the average offender. The general results indicate that drug courts are cost effective and productive in reducing recidivism as measured through re-arrests rates (Sanford and Arrigo 2005). The Multnomah County Drug court in Portland, Oregon is a case in point. As one of the original drug courts, it underwent a ten year program review to evaluate its effectiveness and cost-savings. It was estimated that every dollar spent on the drug court saved $2.63 in overall costs related to the criminal justice system. Over a ten year period which processed over 6500 substance abusing offenders, the overall savings to the county was more than $88 million. These savings were calculated from a 44% reduction of recidivism by drug court participants, due to reduced arrests, bookings, court time, jail/prison days, probation supervision expenses, and treatment services (Finigan, Carey, and Cox 2007). Not included was health care and social services savings, which would likely drive the savings even higher. The city of Sacramento found that 42% (versus 27.2%) of the children removed from substance abusing parents were able to be reunited as a family by involvement with the Dependency Drug Court (Boles, Young, Moore, and DiPirro-Beard 2007). The drug court in La Crosse County Wisconsin noted a reduction in medical costs associated with fewer mothers giving birth to drug exposed babies and an expanded tax base by participants continuing employment or finding jobs (Zollweg 2008). In future program evaluations of drug courts, it is recommended that they incorporate measures of examining employment stability, education and vocational achievements, family functioning, and improvement in health care and disease prevention such as the spread of HIV. These indirect, often overlooked savings, add much more than money to the social revenue.

Conclusion

Controlling substance abuse is greater than passing more drug laws or mandating counseling. Recidivism and relapse offer easy measurement tools, but limit the vision of a holistic approach

to substance abuse control. Looking beyond crime and pathology to see the economic, social, and family benefits to be counted is where true success may be found. That will require policy makers to shift focus from stopping someone from "doing drugs" to helping someone "overcome" drugs. While the elimination of illegal drug use is unlikely, the reduction of the harm caused can be manifested. Prevention of substance abuse is ultimate control, but that involves the discipline to understand the appeal of drugs. P.J. O'Rourke, an American political satirist summarized his feelings about drug control by saying, "No drug, not even alcohol, causes the fundamental ills of society. If we're looking for the sources of our troubles, we shouldn't test people for drugs, we should test them for stupidity, ignorance, greed, and love of power." Perhaps he has a point, and it would be sensible to shift some of our measurements of success in his direction.

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